

Date: Wed, 24 Nov 93 04:30:44 PST  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Homebrew Digest V93 #112  
To: Ham-Homebrew

Ham-Homebrew Digest                      Wed, 24 Nov 93                      Volume 93 : Issue 112

Today's Topics:

[Q] transistor info for OC83B  
Anybody marketing HF kits ?  
Direct Conversion with CW RIT  
single sideband generation

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>  
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Mon, 22 Nov 1993 10:32:32 GMT  
From: munnari.oz.au!spool.mu.edu!howland.reston.ans.net!pipex!Q.icl.co.uk!dsbc!  
iclbra!ss11!kyt@network.ucsd.edu  
Subject: [Q] transistor info for OC83B  
To: ham-homebrew@ucsd.edu

Hello world, Sorry if this is the wrong place for this posting.

I am looking for a spec sheet for a 1960's germanium transistor made by Mullards  
of type OC83B. It forms part of the circuit for a tachometer in a Smiths  
instrument.

Many thanks in advance...                      regards   Kai Tsang

-----  
Date: 23 Nov 93 20:03:36 GMT  
From: ogicse!emory!gatech!howland.reston.ans.net!agate!etch-eshop.Berkeley.EDU!  
ron@network.ucsd.edu

Subject: Anybody marketing HF kits ?  
To: ham-homebrew@ucsd.edu

I'm wondering, does anyone know if (who) markets Ham radio kits.

I'm not yet involved in the hobby, But I could get interested in building an HF rig. I seen mentioned "Daves kits" here om the net.

Thanks

Ron Viegelahn

ron@etcheshop.Berkeley.EDU

-----  
Date: Tue, 23 Nov 1993 18:56:11 GMT  
From: sdd.hp.com!cs.utexas.edu!math.ohio-state.edu!magnus.acs.ohio-state.edu!  
usenet.ins.cwru.edu!news.csuohio.edu!vmcms.csuohio.edu!R0264@decwrl.dec.com  
Subject: Direct Conversion with CW RIT  
To: ham-homebrew@ucsd.edu

I had a HW8 with added RIT, and loved to be able to go above or below the zero-beat point. Also, zero beating was a snap -- turn off the RIT, zero beat to zero frequency, and flip the RIT back on and adjust it to a comfortable audio freq. This does not seem to be possible with dual conversion SSB/CW equipment. Is it?

----- Phil Emerson, AA8JO

-----  
Date: Fri, 19 Nov 1993 13:48:24 GMT  
From: EU.net!ieunet!tcdcs!news.tcd.ie!unix2.tcd.ie!mdennehy@uunet.uu.net  
Subject: single sideband generation  
To: ham-homebrew@ucsd.edu

Newbie Question Time :

Why bother to eliminate the offending sideband in the transmitter at all ?

If the RX is good, It shouldn't be confused when you tell it to listen to an ssb signal and then tune it to a DSB one, should it ?

Or is the idea of transmitting DSBSC not a good one (ie. wastes EM bandwidth) ?

Hiding behind my newbie status to avoid great big red flaming followups,

EI5EDB.

--

Mark "Rain Man" Dennehy, Ham Radio : EI5EDB (2m FM only) :-(  
J.F. Engineering Undergrad, Internet : Mdennehy@Unix2.tcd.ie  
Trinity College Dublin. Telepathy : Mdennehy@Mars.Red.Planet

-----

Date: Tue, 23 Nov 1993 17:12:48 GMT  
From: concert!news-feed-1.peachnet.edu!emory!kd4nc!ke4zv!gary@decwrl.dec.com  
To: ham-homebrew@ucsd.edu

References <2cm8so\$94p@hpscit.sc.hp.com>,  
<1993Nov22.161752.23379@ke4zv.atl.ga.us>, <2crvn5\$j5h@hpscit.sc.hp.com>  
Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)  
Subject : Re: single sideband generation

In article <2crvn5\$j5h@hpscit.sc.hp.com> rkarlqu@scd.hp.com (Richard Karlquist) writes:

>In article <1993Nov22.161752.23379@ke4zv.atl.ga.us>,

>Gary Coffman <gary@ke4zv.atl.ga.us> wrote:

>>

>>>The non-correlation of interference is only worth 3 dB.

>>

>>>I've seen this argued back and forth. It's true if you're just using

>>a summer as a correlator. But more advanced correlators are possible.

>

>That sounds very interesting. Can you give us an more information

>about it?

Well it's tricky in the analog domain, but I've seen one circuit that takes advantage of the common mode rejection of opamps to derive a channel that has all the non-correlated noise and interference but with the desired common signal suppressed by 60-80 db by the opamp's common mode rejection. The anti-correlated signal is then inverted and added back to the main channel, cancelling the undesired noise and interference. Needless to say, the balance of this circuit is critical to it's operation. It should be much easier to implement in DSP. Note this technique assumes ISB detection as well since it requires two separate audio channels. It's not a classic DSB detector. If true IF DSP is available, this could all be combined into one digital circuit.

Gary

--

Gary Coffman KE4ZV | Where my job's going, | gatech!wa4mei!ke4zv!gary  
Destructive Testing Systems | I don't know. It might | uunet!rsiatl!ke4zv!gary

534 Shannon Way                      | wind up in Mexico.           | emory!kd4nc!ke4zv!gary  
Lawrenceville, GA 30244           |                      -NAFTA Blues           |

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Date: 19 Nov 1993 00:39:49 GMT  
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!vixen.cso.uiuc.edu!sdd.hp.com!  
hpscit.sc.hp.com!rkarlqu@network.ucsd.edu  
To: ham-homebrew@ucsd.edu

References <1993Nov15.164550.18931@cs.rit.edu>, <2c8ohb\$abo@hpscit.sc.hp.com>,  
<2cg9h9\$1qqf@ilx018.intel.com>  
Subject : Re: single sideband

In article <2cg9h9\$1qqf@ilx018.intel.com>,  
Doug Braun <dbraun@iil.intel.com> wrote:  
>This has been a fascinating discussion! I have been reverse-engineering  
>an old H-P vector impedance meter without benefit of the manual,  
>and it does something very much like SSB generation.  
>  
>So: the question is: What kind of circuit will take a RF signal  
>anywhere between .5 MHz and 110 MHz, and generate a signal exactly 5KHz  
>higher, with excellent spurious rejection? It sounds like the SSB  
>"phasing" technique, but with a single fixed audio frequency instead

No phasing techniques here. It's just a .5 to 1 MHz. VCO with an  
offset phase locked loop. If this loop goes out of lock, the  
"SEARCHING" light on the front panel lights up. On ranges above .5 to 1  
MHz., harmonics of the VCO are used. This technique would be useless  
for generating SSB voice signals.

Rick Karlquist N6RK  
rkarlqu@scd.hp.com

>Doug Braun           Intel Israel, Ltd.           M/S: IDC1-41  
>                      Tel: 011-972-4-655069           dbraun@inside.intel.com

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Date: 23 Nov 1993 03:42:02 GMT  
From: swrinde!sdd.hp.com!col.hp.com!news.dtc.hp.com!hpscit.sc.hp.com!  
rkarlqu@network.ucsd.edu  
To: ham-homebrew@ucsd.edu

References <2brk68\$qh5@reznor.larc.nasa.gov>,  
<FAUNT.93Nov17151042@netcom2.netcom.com>,  
<1993Nov22.210435.3253@torreypinesca.ncr.com>

Subject : Re: Phase-lock to WWV ?

>>His clocks at the NIST in Boulder are across the hall from the atomic  
>>clock that is the primary standard, and run all the time. They are  
>>calibrated by the atomic standard, when it runs, which is relatively  
>>seldom.

>>73, doug

>

>Oh no! You mean the WWV clock I have heard for the last 20+ years aren't  
>tied directly into the atomic standard? I'm shattered, having had this image  
>in my head for all this time of some titanium-hulled device on a marble slab  
>in a sealed vault to which WWV clock was attached. Funny how images like  
>that, no matter how ludicrous, remain with us as long as there's no reality  
>to displace them.

>

> Kevin Sanders, KN6FQ

| --- |

Let me try to shed some light on this. First, you need to distinguish  
between a usable clock that keeps time over long periods of time and  
a laboratory frequency standard that measures frequency during the  
occasional times when it is running.

The working clocks at NIST consist of a bunch of mainly HP 5061 and  
5071 cesium atomic clocks, which are kept in controlled temperature  
and humidity boxes. Their time is averaged to get the official NIST  
time, which is then averaged with other country's times and the US  
Naval Observatory's time. Worldwide Universal Coordinated Time  
(UTC) is kept in Paris by the French equivalent of NIST (BIPM) and  
is the average of the best 200 or so clocks in the world.

The laboratory frequency standards that fill a room, and are called  
NIST-4, NIST-6, NIST-7, etc. are continually being improved upon  
and run only occasionally for operational purposes. They are used  
to attempt to measure absolute frequency error in the on-line clocks.  
The physics of the small on-line clocks limit the absolute frequency  
accuracy to a few parts in 10 to the 13th while the lab standards  
are known to be good to a few parts in 10 to the 14th. Once the  
error in the on-line clocks is known, it can be corrected for since  
an HP 5071 is stable to a part in 10 to the 14th, for example.

Rick Karlquist N6RK

HP Santa Clara Division (where the HP5071 atomic clock is made)

rkarlqu@scd.hp.com

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Date: 23 Nov 1993 03:23:17 GMT

From: swrinde!sdd.hp.com!col.hp.com!news.dtc.hp.com!hpsc.it.sc.hp.com!

rkarlqu@network.ucsd.edu  
To: ham-homebrew@ucsd.edu

References <1993Nov20.174843.13453@ke4zv.atl.ga.us>,  
<2cm8so\$94p@hpscit.sc.hp.com>, <1993Nov22.161752.23379@ke4zv.atl.ga.us>  
Subject : Re: single sideband generation

In article <1993Nov22.161752.23379@ke4zv.atl.ga.us>,  
Gary Coffman <gary@ke4zv.atl.ga.us> wrote:

>  
>>The non-correlation of interference is only worth 3 dB.  
>  
>I've seen this argued back and forth. It's true if you're just using  
>a summer as a correlator. But more advanced correlators are possible.

That sounds very interesting. Can you give us an more information  
about it?

>I understand that the doubler technique can be used with voice too.  
>The time constant of the PLL has to be altered to a fast attack, slow  
>decay curve. This may introduce a bit of distortion at the beginning  
>of syllables if the attack timing is wrong.

This might be made to work after a fashion if you run the signal through  
a delay line before mixing it with the recovered carrier so that the  
PLL has a chance to lock up first. Anyone know of any actual  
experiments?

>Gary Coffman KE4ZV | Where my job's going, | gatech!wa4mei!ke4zv!gary

Rick Karlquist N6RK  
rkarlqu@scd.hp.com

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End of Ham-Homebrew Digest V93 #112

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